

ECOLOGICAL OBSERVATIONS AND NOTES ON THE LIFE
HISTORY OF *PHILIRIS DIANA PAPUANA* WIND & CLENCH
(LEPIDOPTERA: LYCAENIDAE)

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Abstract

The primary larval food plant of *Philiris diana papuana* Wind & Clench is *Litsea breviumbellata* C.K. Allen. Observations are recorded on the close adaptation of the butterfly larvae and pupae to the features of this plant. *L. breviumbellata* is recorded also as a larval food plant for *Philiris fulgens kurandae* Waterhouse and *Chaetocneme critomedia sphinterifera* (Fruhstorfer) (Hesperiidae).

Introduction

Philiris diana papuana Wind & Clench, a species not well represented in collections, has been recorded from Cape York to Claudie River (Common and Waterhouse 1981). In recent years we have reared many individuals from Heathlands, several locations in the Iron Range area and from the Rocky River and Chester River area on Silver Plains Station (new southern limit for this subspecies). These records show the species to be widespread and at times abundant. Wood (1984) first described the life history from Iron Range and listed *Litsea leefeana* (F. Muell.) Merr. (Lauraceae) as the larval food plant, while Johnson (1993) first recorded *Litsea breviumbellata* C.K. Allen as a larval food plant.

Observations and Discussion

In our experience, which includes the location of juvenile stages of *P. d. papuana* on more than 100 individual plants at numerous locations, *L. breviumbellata* is always used. Further, the life history behaviour supports the contention that this species is the primary larval food plant. Early instar larvae are yellow and orange and rest adjacent to veins beneath older leaves which are rusty golden yellowish on the underside. In later instars the humped larvae become deep reddish and rest on the upper surface of the terminal buds or very young leaves, sometimes on the swollen petioles of the leaves. In *L. breviumbellata* the juvenile foliage and petioles are rich rusty red and *P. d. papuana* larvae are highly cryptic when resting on these. The final larval instar and pupa are striped and, unlike other known Australian *Philiris* spp., the pupa is fully exposed on the central vein at the base of the upper surface of a juvenile leaf (see Wood 1984). In this situation the pupa has excellent cryptic coloration on *L. breviumbellata*, indicating a strong adaptation between the juvenile stages of *P.d. papuana* and this plant.

The record of *L. leefeana* by Wood (1984) raises interesting questions. The juvenile leaves, which are green, do not provide the same opportunity for disguise and we believe it is unlikely that *L. leefeana* would be used if *L. breviumbellata* was available. Although we have not found larvae of *P. d.*

papuana on *L. leefeana* in the wild, we have placed larvae on potted plants of this species and found that they are reluctant to feed compared with larvae on *L. breviumbellata*. If confined to *L. leefeana*, larvae grow more slowly and are less likely to reach full size. In addition, in all locations where we have found *P. d. papuana* we have found *L. breviumbellata* to be abundant, whereas *L. leefeana* appears to be rare or absent.

The ecological niche occupied by *P. d. papuana*, in our experience, is the ecotone between rainforest or swampland and open sclerophyll woodland. This environment is subject to periodic fires and the groves and patches of *L. breviumbellata* regenerate from suckers or seedlings to provide ideal resources for larval *P. d. papuana*. At times we have found large numbers of juvenile stages on such regrowth patches, usually not more than one or two per plant but once as many as six larvae on a small plant. The larvae of *P. fulgens kurandae* Waterhouse, at least in the Iron Range area, also occasionally use *L. breviumbellata* but they rest and feed on the older leaves only. In our experience in the Innisfail area, *P. fulgens* prefers to use *Cryptocarya mackinnoniana* F. Muell. (Lauraceae) as a larval food plant. Early instar larvae of both species often rest under leaves near the base of small plants.

The hesperiid *Chaetocneme critomedia sphinterifera* (Fruhstorfer) also uses *L. breviumbellata* as a larval food plant and we have found larvae at Heathlands, widely in the Iron Range area and in the Rocky River area.

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References

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